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ABSTRACT

Ego development data were collected from two groups of subjects. One group consisted of 175 students from junior high, senior high, and college. The second group was comprised of 136 adults who were either teachers and administrators of a medium-sized public school system, or long-time employees of a large chemical manufacturing corporation. Subject responses to 36 sentence stems from the Sentence Completion Test (SCT) were individually assigned to one of nine ego levels by matching them with response categories provided in the SCT manual. Parcels of items were constructed by assigning ego level ratings (1-9) for each item to one of six parcels. The sum of item ratings within each parcel was used as the parcel score. The same procedure was used to construct word fluency parcels. The number of words used in each sentence completion was assigned to one of six parcels. Factor analyses revealed that for the female student group, factor one was the word fluency factor, and the second factor represented ego parcel loadings. The order of the two factors was reversed for the male students. The factor structure in the male and female adult groups was consistent with that found for the male students. (Author/PN)

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Parcel Factoring of Loevinger's Ego Development Measure

Presented at Southeastern Psychological Association, 1983

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Abstract

Ego development data were collected from two groups of subjects. One group consisted of 175 students (113 females, 62 males) from junior high ($\bar{X}_{age}$ = 13.6), senior high ($\bar{X}_{age}$ = 17), and college ($\bar{X}_{age}$ = 18.2). The second group was comprised of 136 adults (75 females, 61 males) who were either teachers and administrators of a medium-sized public school system, or long-time employees of a large chemical manufacturing corporation ($\bar{X}_{age}$ = 52).

Subject responses to 36 sentence stems from the Washington University Sentence Completion Test were individually assigned to one of nine ego levels by matching them with response categories provided in the SCT manual. Parcels of items were constructed by assigning ego level ratings (1 - 9) for each item to one of six parcels. The sum of item ratings within each parcel was used as the parcel score. The same procedure was used to construct word fluency parcels. The number of words used in each sentence completion was assigned to one of six parcels. Separate factor analyses of the 12 parcels (6 ego, 6 word fluency) were computed for males and females within each of the two groups of subjects.

Factor analyses revealed differences in the factor structure for the male and female students. For the female student group, factor one was the word fluency factor, and the second factor represented ego parcel loadings. The order of the two factors was reversed for the male students. The factor structure in the male and female adult groups was consistent with that found for the male students.

Parcel factoring of Loevinger's ego development measure

Problem:

Personality and developmental psychology journals are publishing increasing numbers of research articles which incorporate Jane Loevinger's conceptualization of ego development. In presenting both a model and a measurement instrument Loevinger (1966, 1970) has attempted to derive a construct of ego development which can be assessed in a psychometrically sound manner. Ego development is measured through a specifically designed 36-item Sentence Completion Test (SCT).

Substantial evidence of the reliability and validity of the SCT has been obtained (Hauser, 1976; Holt, 1980). Two characteristics of the SCT which have not received adequate research attention concern the relationship between ego level rating and word fluency and secondly, the factor analytic properties of the SCT. Through the application of recently developed factor analytic procedures the present paper will address both of these issues.

Method:

Ego development data were obtained from two groups of subjects. One group consisted of 175 students (113 females, 62 males) from junior high ($\bar{X}_{age}$ = 13.6), senior high ($\bar{X}_{age}$ = 17), and college ($\bar{X}_{age}$ = 18.2). The second group consisted of 75 adult women ($\bar{X}_{age}$ = 50) who were employees of a medium-sized public school system and 61 adult men ($\bar{X}_{age}$ = 52) who were long-term employees of a large corporation.

Subjects' responses to the 36 sentence stems from the SCT were individually assigned to one of nine ego levels by matching them with response categories provided in the SCT manual. By entering parcels of items into factor analysis (Cattell and Burdsal, 1975; Kishton, 1982) the intent is to identify structure

while avoiding the imprecision inherent in factoring unstable individual questionnaire items. In the present study, parcels were constructed by assigning ego level ratings (1 thru 9) for each item to one of six parcels. The sum of item ratings within each parcel was used as the parcel score. The same procedure was used to construct word fluency parcels. The number of words used in each sentence completion was assigned to one of six parcels. Separate parcel factor analyses were performed for the male and female students.

Results:

Factor analyses revealed differences in the factor structure for the male and female students (Table 1). For the female student group two factors (70 percent of the estimated variance) were extracted. Factor one was the word fluency factor with high loadings from the word fluency parcels. The second factor received highest loadings from the ego level parcels. Results for the adult women and men were similar, with the first two factors (76 percent of the variance) reflecting word fluency and ego level ratings respectively (Table 2). The order of the first two factors for the male students (76 percent of the variance) was reversed. The first factor was derived from the ego parcels while the second factor reflected word fluency.

Interpretation:

The results of the factor analyses are relevant from both a psychometric and theoretical standpoint. From a measurement perspective, Loevinger (1970) has maintained factor analysis of the SCT is problematic due to the nature of responses on individual sentence completion items. The present study indicates factoring parcels rather than items allows researchers to determine structure in spite of the instability of individual items. The present findings tend to support the notion of a general factor of ego development. In

Table 1

Rotated Factor Matrices for Student Groups

	Males		Females	
Variable	Factor 1	Factor 2	Factor 1	Factor 2
Ego P1	.875	-.071	.083	.804
Ego P2	.853	-.138	.189	.804
Ego P3	.810	-.136	.205	.774
Ego P4	.847	-.080	.238	.771
Ego P5	.844	-.055	.045	.737
Ego P6	.894	-.125	.243	.822
WC P1	.044	.785	.868	.258
WC P2	-.061	.916	.892	.220
WC P3	-.212	.864	.648	.095
WC P4	-.132	.772	.790	.107
WC P5	-.221	.864	.852	.245
WC P6	-.038	.796	.822	.120

Table 2

Rotated Factor Matrices for Adult Groups

	Males		Females	
Variable	Factor 1	Factor 2	Factor 1	Factor 2
Ego P1	.972	.457	.964	.501
Ego P2	.972	.47.	.961	.517
Ego P3	.983	.483	.955	.500
Ego P4	.984	.493	.960	.540
Ego P5	.978	.445	.968	.495
Ego P6	.964	.376	.963	.539
WC P1	.436	.859	.447	.674
WC P2	.424	.846	.345	.814
WC P3	.357	.920	.368	.825
WC P4	.478	.728	.480	.642
WC P5	.352	.844	.449	.879
WC P6	.360	.866	.583	.725

addition, they provide evidence that a second factor reflecting word fluency or verbosity must be considered when interpreting ego development data obtained from the SCT. In some groups of subjects, or certain age groups, word fluency may be the most viable factor.

Since use of the SCT as a research instrument is increasing it is appropriate to apply such techniques as parcel factoring and structural modeling to both explore and confirm the factorial properties of ego development data.

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